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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission 13

Application Number	10/789,000
Filing Date	2/26/04
First Named Inventor	Thomas M. Mayers et al
Art Unit	1772
Examiner Name	Alicia A. Chevalier
Attorney Docket Number	3608 US

**ENCLOSURES (Check all that apply)**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/<br>Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts<br>under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a<br>Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation<br>Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><br><input type="checkbox"/> Appeal Communication to Board<br>of Appeals and Interferences<br><br><input type="checkbox"/> Appeal Communication to TC<br>(Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify<br>below):<br>Response to Notification of Non-Compliant<br>Appeal Brief, Appellants Amended Appeal<br>Brief, Claims Appendix, Prior Decisions<br>Appendix, Postcard |
|--|--|---|

Remarks

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	USG Corporation		
Signature			
Printed name	David F. Janci		
Date	5/23/07	Reg. No.	28,620

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Judith A. Powers	Date	5/23/07

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Patent Application No. 10/789,000 )

Applicants: Thomas M. Mayers et al )

Filed: February 26, 2004 )

TC/AU: 1772 )

Examiner: Alicia A. Chevalier )

Docket No.: 3608 US )

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF  
(37 CFR 41.37)

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR 41.37, appellants hereby respond to the Notification of Non-Compliant Appeal Brief mailed April 25, 2007. This Response will be directed to only those enumerated items identified as defective on said Notification.

Item 7. The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c) (1) (vii)).

As set forth in the brief, claim 1 is the only independent claim involved in the appeal and claim 1 has not been amended. In fact, claims 1-9, all of the appealed claims, have not been amended. Attached to the Amended Appeal Brief as a "Claims Appendix" is a copy of claims 1-9, all the claims involved in the appeal.

Item 8. The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131 or 1.132 or of any other evidence entered by the examiner and relied upon by appellant in the appeal (37 CFR 41.37 (c) (1) (ix)).

The Amended Appeal Brief submitted herewith sets forth that there was no such evidence submitted under 37 CFR 1.130, 1.131 or 1.132 or any other evidence entered by the examiner and relied upon by appellants.

Item 9. The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37 (c) (1) (x)).

As set forth in Appellants Appeal Brief, "There are no appeals or interferences that are related to this appeal." However, it may be a requirement that a copy of the Panel Decision from the Pre-Appeal Brief Review should have been attached to the Brief. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review is attached as a Prior Decisions Appendix to the Amended Appeal Brief.

It is believed that the Amended Appeal Brief enclosed herewith complies with all of the requirements of 37 CFR 41.37.

Respectfully submitted,

*Robert H. Robinson*

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PATENT

Attorney Docket No. 3608

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Thomas M. Mayers et al	)	Examiner: Alicia A. Chevalier
	)	
Date Filed: February 26, 2004	)	
	)	
Application No.: 10/789,000	)	Group Art Unit: 1772
	)	
Confirmation No. 9213	)	

Title: ABUSE-RESISTANT CAST ACOUSTICAL CEILING TILE HAVING AN  
EXCELLENT SOUND ABSORPTION VALUE

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANTS AMENDED APPEAL BRIEF**

Dear Sir:

In support of the appeal from the Final Rejection dated July 27, 2006, the Panel Decision from Pre-Appeal Brief Review dated December 01, 2006, and the Notification of Non-Compliant Appeal Brief mailed April 25, 2007, Appellants now submit their Amended Appeal Brief.

Real Party In Interest

The patent application that is the subject of this appeal is assigned to USG Interiors, Inc. which is a wholly owned subsidiary of USG Corporation.

Related Appeals and Interferences

"NONE"      However, a copy of the Notice of Panel Decision from Pre-Appeal Brief Review is attached as a Prior Decisions Appendix.

Status of Claims

Claims 1-9 have been rejected and claims 10-14 have been withdrawn from consideration. The rejection of claims 1-9 is being appealed, and a copy of claims 1-9 is

attached hereto as a Claims Appendix. There have been no amendments to the claims on appeal.

#### Status of Amendments

“NONE” There have been no amendments to the claims or the specification.

#### Summary of Claimed Subject Matter

The rejection of claims 1-9 is the subject of this appeal, and claim 1 is the only independent claim involved in the appeal. Claim 1 as originally filed, and not amended, reads as follows:

An abuse-resistant, cast acoustical ceiling tile having a core made from a starch gel and mineral wool fiber composition, wherein the front surface of the tile is coated with aggregate particles having an average particle mean diameter of at least about 1,000 microns.

The abuse-resistant, cast acoustical ceiling tile of claim 1 is described summarily in the specification on page 3, lines 9-16. The application of the aggregate particles to the front surface of the tile is described summarily in the specification on page 3, lines 18-22. The slurry or pulp comprising the core of the ceiling tile is described in detail in the specification on page 3, line 26 through page 4, line 22. The aggregate particles and their deposition on the front surface of the tile is described in detail in the specification on page 4, line 23 through page 5, line 10. The criticality of the average aggregate particle mean diameter is described on page 5, lines 11-17. This criticality is illustrated in Example 2, page 9, line 22 through page 10, line 11.

Referring to the drawings, Figure 4 illustrates an acoustical tile (20) having a surface layer (17) of aggregate particles (16) applied to the surface of a cast mineral fiber core (24). This is disclosed in the specification on page 7, lines 8-14.

#### Grounds of Rejection to be Reviewed on Appeal

Claims 1, 2, 4-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Forry et al (U.S. Patent No. 4,585,685).

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baig (U.S. Patent Application Publication No. 2002/0139611 which issued as U.S. Patent No. 6,443,256).

#### Argument

Claims 1, 2, 4-7 and 9 have been rejected under 35 U.S.C. 102(b) as being anticipated by Forry et al (U.S. Patent No. 4,585,685). 35 U.S.C. 102(b) states that a

person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

It is noted that both claims 3 and 8, which recite that the aggregate particles are calcium carbonate, have not been rejected under 35 U.S.C. 102 (b) as being anticipated by Forry et al. However, in the Final Rejection the Examiner states that Forry et al discloses “the aggregate particles are selected from the group consisting of calcium carbonate, crushed marble, sand, clay, perlite, vermiculite, crushed stone and glass (column 4, lines 31-41)”. The Examiner has erroneously stated that the examples of aggregate disclosed in Forry et al, in column 4 includes calcium carbonate, whereas there is no disclosure of calcium carbonate, Applicants preferred aggregate, in the examples of aggregate recited in column 4.

In the Final Rejection, the Examiner states that the preamble in the rejected claims, “an abuse-resistant, cast acoustical (sic) ceiling tile”, is deemed to be a statement with regard to the intended use and is not further limiting in so far as the structure of the product is concerned. The Examiner further states that in article claims, a claimed intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art MPEP § 2111.02.

“Abuse-resistance” is a property of Applicants’ ceiling tile product, and it is a stated object of Applicants invention to provide a cast acoustical tile having an abuse-resistant surface (specification: page 2, lines 10 and 11). In the Forry et al reference, there is absolutely no disclosure or discussion concerning abuse resistance. There is no disclosure in Forry et al showing how to test for abuse resistance in contrast to the detailed discussion in Applicants’ specification page 7, line 15 - page 8, line 16. The Examiner assumes that since Forry et al apply aggregate to a surface of a dry-formed ceiling tile that the Forry et al ceiling tile is abuse resistant. However, as shown in Applicants’ Example 2 (page 9, line 22 - page 10, line 11) even a cast ceiling tile which had a surface of aggregate particles having an average particle mean diameter of 800

microns had no improvement in impact resistance compared to a standard cast tile having no aggregate on the surface. This clearly demonstrates the criticality and the patentability of the aggregate particles having an average particle mean diameter of at least about 1000 microns as recited in all of the rejected claims.

In the Final Rejection, the Examiner states that the limitation “cast” is a method limitation and does not determine the patentability of the product, unless the process produces unexpected results. First of all, it should be noted that there is absolutely no disclosure or discussion of a casting process or a cast ceiling tile in Forry et al. In the prior art section of Forry et al, there is a discussion concerning wet-forming procedures for producing acoustical board, but these are wet-forming techniques using a foraminous support wire referred to in the art as wetlaid or water-felting procedures and products. Forry et al does disclose, column 1, lines 42-51, that aggregate facing materials have not been successfully used to produce acoustical materials because the facing materials cannot be adequately adhered to the board when it is in the wet state. Contrary to this teaching by Forry et al, Applicants have discovered that aggregate facing materials can be adhered to ceiling tiles in the wet state provided that the tiles are made by a casting process.

It is believed that the difference between the wetlaid or water-felting products and the cast ceiling tiles of Applicants’ invention enabling application of aggregate particles to the wet surface of the cast ceiling tile is the result of a much higher percentage of starch binder in the cast ceiling tile compared to the wetlaid ceiling tile. In the casting process used to make Applicants ceiling tile, the starch gel binder ranges from 75-83 weight percent. Although there is no disclosure in Forry et al concerning the percentage of mineral fiber in the wetlaid products referred to therein, wetlaid mineral wool ceiling tiles made using a foraminous support wire generally have a much higher percentage of mineral wool, such as 70% or more. It is believed that by using Applicants’ cast process to form the wet mat to which the aggregate material is applied, the higher percentage of starch binder provides better and stronger bonding between the mat and the aggregate material compared to what can be achieved using a dry-formed web (Forry et al) or a

wetlaid process to form the tile mat. It is also noted that in the Forry et al reference, there is a teaching that the aggregate deposited on the dry-formed web can be mixed with an organic binder, whereas Applicants do not mix a binder with the aggregate.

As disclosed in Applicants' patent application (page 1, line 26 to page 2, line 9), Forry et al disclose applying aggregate material to the surface of a dry-formed web and embedding the aggregate material into the web by a consolidation process.

However, Example 1 of the Forry et al patent discloses preparing a ceiling tile by a wetlaid process using a Fourdrinier apparatus. A dry layer of perlite was applied to the wet mat, passed through a press section, and then dried. Upon testing this sheet material for acoustical properties, Forry et al concluded that the acoustical performance was unacceptable. This disclosure would lead a person skilled in the ceiling tile art away from applying aggregate material to the wet surface of a tile mat. In contrast thereto, and unobvious to a person skilled in the art, Applicants have discovered that if the aggregate material is applied to a wet tile mat made by a casting process, the resulting ceiling tile has excellent acoustical properties and excellent abuse resistance.

Applicants have discovered that in order to obtain improved abuse/impact resistance the aggregate particles must have an average particle mean diameter of at least about 1,000 microns and preferably from about 1,400 microns to about 2,500 microns. There is no teaching of abuse/impact resistance in Forry et al and definitely no teaching of this criticality. The Examiner cites the statement in Example 2 of Forry et al (column 8, line 27) referring to "6 mesh". However, the disclosure states that the "largest perlite particle" was about 6 mesh, and it does not refer to an average particle mean diameter. The reference to the 6 mesh perlite particles related to the thickness of the perlite layer. It did not relate to abuse/impact resistance. Applicants discovered that there is criticality in the average particle mean diameter required to obtain improved abuse/impact resistance (see Example 2).

Claims 1-9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Baig (U.S. Patent Application Publication No. 2002/0139611). This publication subsequently issued as U.S. Patent No. 6,443,256. The principal disclosure in the Baig



reference relied upon by the Examiner appears in Example 9 (column 10, lines 15-32) wherein it states that the mineral wool rich surface layer was coated with coarse calcium carbonate particles, and the dual layer ceiling tile had an estimated NRC of 0.50.

Example 9 in the Baig reference discloses that the mineral wool rich surface of the dual layer ceiling tiles was coated with dry calcium carbonate particles. The mineral wool rich surface was dry and not a wet surface as in Applicants' process for embedding aggregate particles in the surface of a cast ceiling tile. Furthermore, in the Baig reference, the ceiling tiles were painted with a roll coat and then with a flow coat and dried prior to applying the calcium carbonate particles. The surface to which the calcium carbonate particles were applied was a dry, painted surface. In Applicants' invention, the aggregate particles are embedded in a wet surface.

In the Baig reference, the calcium carbonate particles were spray coated onto the painted and dried surface of the tiles. Applicants' ceiling tiles have aggregate particles which are embedded into the surface of the tile by compressing the aggregate particles into the wet surface of the cast tile. There is no compression procedure disclosed in Example 9 of Baig. Furthermore, Applicants do not apply the aggregate particles to a painted surface.

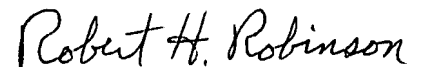
There is no teaching in the Baig reference relative to abuse/impact resistance. Baig does state that the calcium carbonate particles were coarse but there is no definition as to what is meant by the term "coarse". There is no disclosure that the average particle mean diameter is critical to achieving improved abuse/impact resistance or that the average particle mean diameter must be at least about 1,000 microns.

In Example 9 of the Baig reference, there is a statement that "the mineral wool rich surface was coated with dry calcium carbonate particles". In column 4, lines 1-18 of the Baig reference, there is a disclosure that the mineral wool fiber content in the fiber-rich surface layer ranges from 70-90 weight percent. In Applicants' ceiling tile made by a casting process, the wet surface layer comprises 75-83 weight percent starch gel and only 17-25 weight percent mineral wool fibers (page 4, lines 17-22). It is believed that this high percentage of starch gel provides better and stronger bonding between the mat

and the aggregate particles, whereas if the aggregate particles were to be compressed into the fiber-rich surface layer of the Baig ceiling tile, the aggregate particles would not be adequately adhered to the wet fiber-rich surface as taught by Forry et al (column 1, lines 42-45).

For the reasons set forth above, Applicants' claims 1-9 are not anticipated by Forry et al, and are patentable over the Baig reference.

Respectfully submitted,

A handwritten signature in cursive script that reads "Robert H. Robinson".

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## CLAIMS APPENDIX

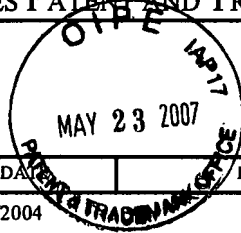
1. An abuse-resistant, cast acoustical ceiling tile having a core made from a starch gel and mineral wool fiber composition, wherein the front surface of the tile is coated with aggregate particles having an average particle mean diameter of at least about 1,000 microns.
2. The ceiling tile of claim 1 wherein the aggregate particles are selected from the group consisting of calcium carbonate, crushed marble, sand, clay, perlite, vermiculite, crushed stone and glass.
3. The ceiling tile of claim 2 wherein the aggregate particles are calcium carbonate.
4. The ceiling tile of claim 3 wherein the aggregate particles have an average particle mean diameter ranging from about 1,000 microns to about 3,000 microns.
5. The ceiling tile of claim 3 wherein the aggregate particles have an average particle mean diameter ranging from about 1,400 microns to about 2,500 microns.
6. The ceiling tile of claim 1 which has a noise reduction coefficient (NRC) value of at least about 0.50.
7. The ceiling tile of claim 2 which has a noise reduction coefficient (NRC) value of at least about 0.50.
8. The ceiling tile of claim 3 which has a noise reduction coefficient (NRC) value of at least about 0.50.
9. The ceiling tile of claim 4 which has a noise reduction coefficient (NRC) value of at least about 0.50.

PRIOR DECISIONS APPENDIX



# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,000	02/26/2004	Thomas M. Mayers	3608	9213

7590  
USG Corporation  
700 N. Highway 45  
Libertyville, IL 60048

12/01/2006

EXAMINER


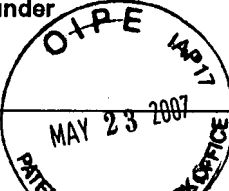
CHEVALIER, ALICIA ANN

ART UNIT PAPER NUMBER

1772

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Application Number</b> 	<b>Application/Control No.</b> 10/789,000  Alicia Chevalier	<b>Applicant(s)/Patent under Reexamination</b> MAYERS ET AL. <b>Art Unit</b> 1772	
<b>Document Code - AP.PRE.DEC</b>			

## Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed October 17, 2006.

1. ☐ **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- ☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- ☐ The request does not include reasons why a review is appropriate.
- ☐ A proposed amendment is included with the Pre-Appeal Brief request.
- ☐ Other:

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. ☒ **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

☒ The panel has determined the status of the claim(s) is as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1-9.

Claim(s) withdrawn from consideration: 10-14.

3. ☐ **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. ☐ **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) Jennifer K. Michener

(2) Alicia Chevalier

(3) Rena Dye

(4) \_\_\_\_\_